

Omaha SCIENCE MEDIA PROJECT

2010 Workshop Evaluation: Teacher Survey Results



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Introduction

Project Description

The Omaha Science Media Project (OSMP) is a two-year project funded by the Omaha Schools Foundation to enhance Omaha Public School (OPS) teachers' understanding of scientific research. This collaborative initiative involves OPS, University of Nebraska Medical Center, Nebraska Center for Virology, Center for Biopreparedness Education, Nebraska Educational Telecommunications, Soundprint Media Center, Inc., University of Nebraska-Lincoln College of Journalism and Mass Communications, University of Nebraska State Museum, and the Center for Multidisciplinary Programs in Education Sciences at Northwestern University. The underlying concept of the OSMP is to use media production, including radio, video and multimedia, to enhance teaching and learning about science and scientific research. The hypothesis underpinning work of the OSMP is that science teachers can improve their science pedagogy by participating in intensive professional development experiences during which they produce media deliverables focused on the latest biomedical research topics. OSMP project leaders anticipated that student learning and interest in science and health careers would increase as teachers infused their new knowledge into the classroom.

OSMP 2009

The first year of the project centered around a two-week summer workshop involving sixteen teachers and fifteen students from the Omaha Public Schools in an intensive, collaborative workshop about viruses and infectious disease in July 2009. Teaming up with media professionals and content specialists, these teachers and students worked as science journalists to create media productions (audio, video, and multimedia) focusing on virology research topics. The OSMP workshop model included three important design features that OSMP leaders identified as key and somewhat unique among teacher internship professional development programs. These features were:

- 1) Participant immersion in a virology research project for two weeks, including access to research staff, labs, and to a full-time mentor.
- 2) Inclusion of students as peers in the learning and production teams.
- 3) Development of media products as an outcome, with continuous access to media mentors to facilitate this goal.

The goals of the project were 1) to produce high-quality, classroom-ready media products about virus topics that would be relevant to students in middle and high school and tied to Nebraska and National Science Education Standards, 2) to improve the pedagogy of these teachers through experiential professional development, 3) to establish the foundation for long-term partnerships between Omaha Public Schools and Nebraska's biomedical institutions, and 4) to explore media creation as a strategy for making science relevant for students.

The project's media mentors finalized the media products by January 2010, and these are available to Omaha Public School teachers as online curriculum resources. In addition to these media products, OSMP project leaders anticipated that as the teachers learned media and journalistic skills and infused them into their classroom teaching, student learning and interest in science and health careers would increase. Evaluation results on the OSMP 2009 workshop

(Spiegel, 2010) found that participating teachers felt that they had learned valuable skills to use in their classrooms. At the end of the workshop, these teachers anticipated they would see an increase in student motivation and interest by using media and current science research and by making the content more relevant to their students. In a follow-up evaluation after the workshop (Spiegel, 2009), all the participating teachers indicated that they had begun to incorporate student-generated media in their curriculum, and the majority were creating media content themselves and using their new science media skills to enhance the curriculum, as well as collaborating with other teachers on different media projects. The evaluation results concluded that the three identified features of the workshop, participant immersion, student inclusion and the goal of media products, were important contributing factors to the success of the workshop, and that the format of using small teams was a strength. Group dynamics within the teams, however, was a challenge, especially given the complexity of the finished product. Teachers also found the limited time of the workshop to gain expertise on the media equipment and software to be challenging. Recommendations included providing participants with more preparation to work in collaborative groups and using simpler media tools that teachers could utilize more readily and that could be made available to classrooms with fewer resources.

OSMP 2010

OSMP leaders and staff initiated a second workshop, OSMP 2010, based on feedback and reflection on the 2009 workshop, program goals, and available resources. While the overarching goal of infusing journalistic media skills into science teaching remained consistent, OSMP staff structured this second workshop somewhat differently. Prior to the workshop, teachers identified topics they found challenging to teach in the past. During the one-week workshop, teachers focused on this content, working in small group production teams. This workshop did not include science research immersion, and the teachers did not have direct access to science researchers or content experts. Media mentors were available but did not serve as members of production teams. Returning teachers from the 2009 OSMP workshop served as mentors for their colleagues, and the 2010 participating students were involved in a role more similar to a typical classroom situation, rather than as peers with the teachers. The goals of the 2010 workshop complemented the 2009 OSMP workshop by focusing on teachers creating media and simulating a classroom environment with students, and continuing to grow the cohort of innovative science teachers in OPS.

Purpose of Evaluation

This evaluation describes the feedback provided by the 2010 OSMP workshop participants, including the returning 2009 participants. The goal of this report is to help the project staff, the funding agency, and other educators and administrators better understand participants' experiences and provide relevant information for planning future teacher workshops incorporating media production. This report reflects on the process and considers some of the strengths and challenges of the 2010 summer workshop and the project as a whole. The questions guiding the workshop evaluation were:

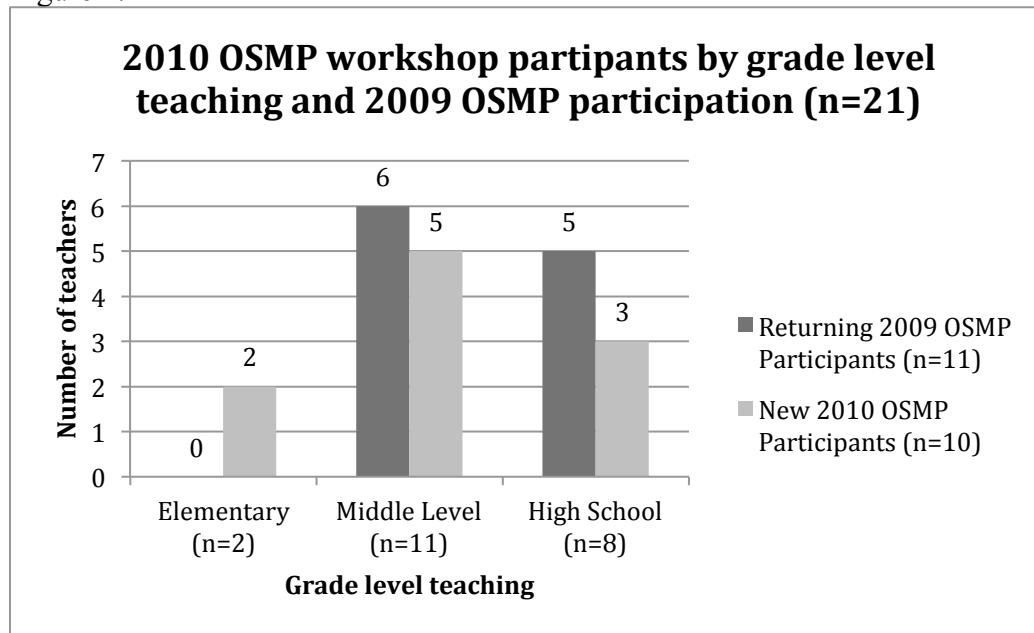
- 1) To what extent did teachers' find the lessons they developed during the workshop useful for their teaching?
- 2) To what extent did the workshop prepare teachers to continue to develop science media lessons for their classrooms?
- 3) For the returning 2009 OSMP participants, how have they made use of their new skills in their classrooms during the last school year?

Methods

Participants

Twenty-one OPS teachers participated in the 2010 one-week summer workshop. These 21 teachers included eleven returning 2009 OSMP participants as well as 10 newly involved teachers who were recruited by the returning OSMP teachers (see Figure 1). Similar to the 2009 workshop, the participating teachers included journalism (n=1) and technology (n=2) teachers as well science teachers (n=16). Teachers from upper elementary to high school were included in the 2010 participants. In addition to the teachers, 41 students, including 11 returning 2009 OSMP participating students, were involved in the 2010 workshop.

Figure 1.



Data collection and Instrument

On the last day of the July 2010 workshop, we asked all the participating teachers to complete a written survey about their workshop experiences. Completion of the survey took approximately 15–20 minutes. The evaluator developed the survey instrument in consultation with OSMP partners, including the Project Director, the OPS Coordinator, and other staff (see Appendix for a copy of the survey). Both the University of Nebraska Institutional Review Board and the Omaha Public Schools Research Review Committee approved all procedures and the survey instrument for use prior to data collection.

Results

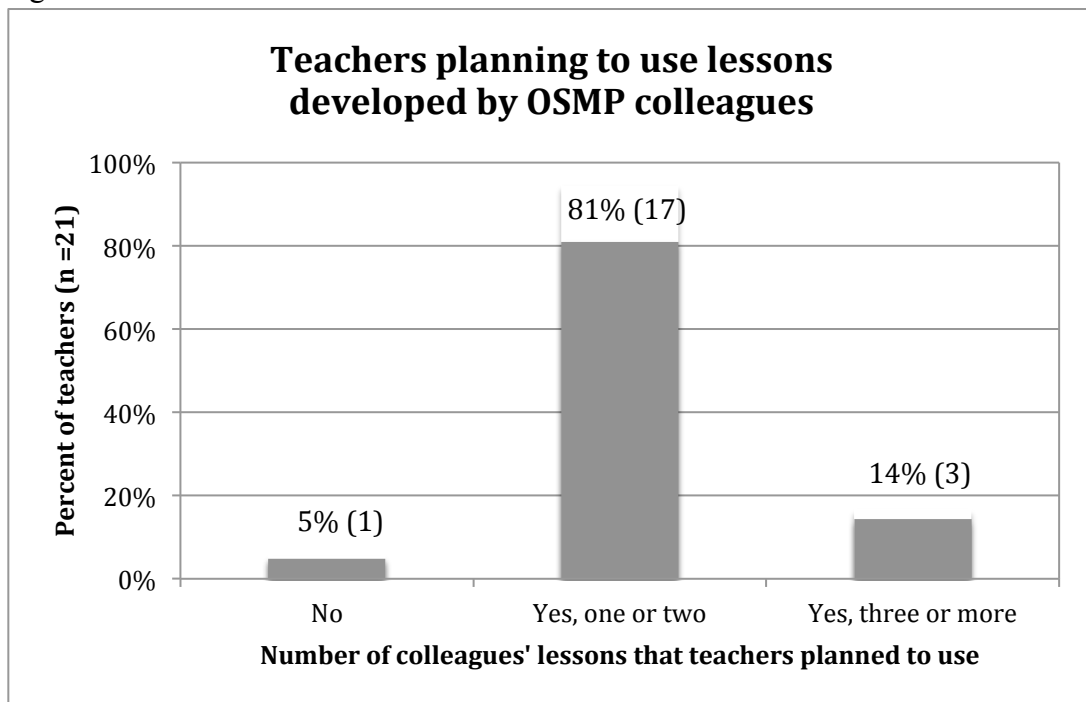
This report presents information about the perceived utility and quality of the lessons developed, the implementation of the lessons and science media skills, and the workshop itself. This includes feedback from the returning 2009 OSMP teachers on how they used their OSMP skills in their classrooms over the past year.

Utility of lesson developed

We asked participating teachers how well the lessons they developed at the 2010 OSMP workshop would fit into their current course plan. All of the teachers indicated that they had already integrated the lesson into their course plan (10 teachers) or knew where it would fit (11 teachers). None of the teachers expressed uncertainty about the utility of the lesson in their own classrooms.

Another goal of the lesson development was for the lessons to be transferrable from one classroom to another, so a lesson developed by one teacher could be readily used by another. To assess the extent to which teachers felt able to use lessons developed by their OSMP colleagues, we asked whether participants planned to make use of any lessons besides their own. All but one teacher planned to use not only their own lesson(s), but others' as well (see Figure 2).

Figure 2.



Quality of lessons developed

Prior to the OSMP 2010 workshop, participating teachers identified content areas that they found difficult to teach for a variety of reasons, including genetics, evolution, density/properties of liquids, and recycling/sustainability. These content areas then provided the focus around which the 2010 workshop lessons were developed. We asked teachers to rate how the new lessons they had developed over the course of the week compared to a typical lesson in the same course, with respect to content difficulty, level of engagement for students and other qualities. In most cases, teachers rated their new lessons more interesting, engaging, memorable and meaningful to their students. With respect to content difficulty, teachers most often rated the newly developed lessons as similar to a typical lesson (see Figure 3).

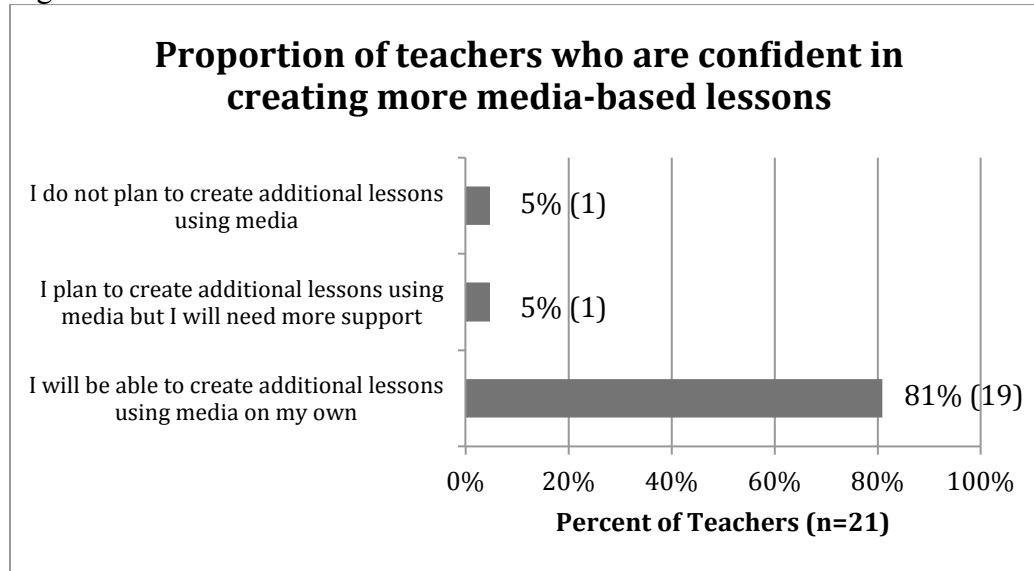
Figure 3.

Compared to an average lesson, new OSMP lesson is...			
In content difficulty	Less rigorous in content difficulty 10% (2)	Equally as rigorous in content difficulty 48% (10)	More rigorous in content difficulty 33% (7)
In how meaningful to students	Less meaningful to students 0% (0)	Equally as meaningful to students 29% (6)	More meaningful to students 71% (15)
In interest level of students	Less interesting to students 0% (0)	Equally as interesting to students 14% (3)	More interesting to students 86% (18)
In how well students will remember it	Less memorable for students 0% (0)	Equally as memorable for students 19% (4)	More memorable for students 81% (17)
In how engaging it is for students	Students will be less engaged 0% (0)	Students will be equally engaged 19% (4)	Students will be more engaged 81% (17)

Implementation

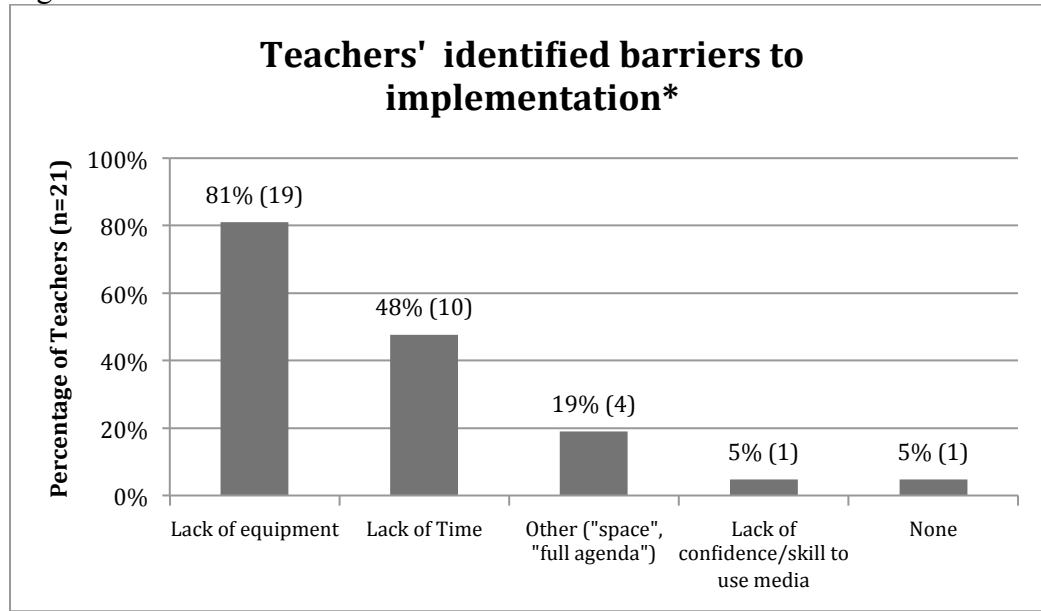
One goal of the OSMP workshop was for teachers to develop the skills and confidence to continue to develop additional lessons using science media. When asked whether they planned to create additional lessons, the large majority of teachers felt they would be able to do that (see Figure 4).

Figure 4.



Teachers saw significant barriers to implementation of media-based lessons in their classroom, however. The most commonly perceived barrier was lack of equipment, cited by over 80% of teachers (see Figure 5). Lack of time, both with respect to time in the curriculum as well as time to plan, was also seen as problematic by over half of the participating teachers. Only one teacher, a media specialist, saw no significant barriers to implementation.

Figure 5.

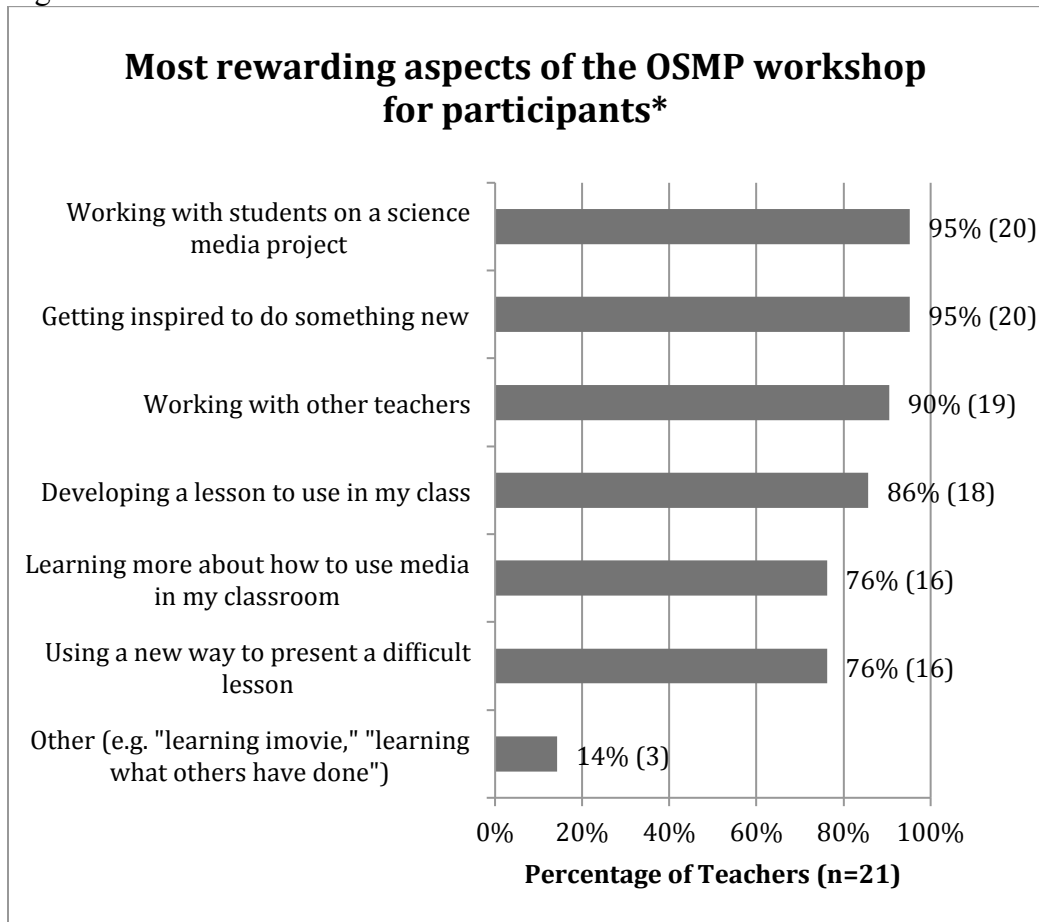


*teachers marked multiple responses

Workshop Feedback

We asked teachers what they found to be the most rewarding and most challenging about their weeklong experiences. Overall, teachers' responses about rewarding aspects were more numerous and varied than the challenging aspects. Similar to the 2009 workshop, teachers found it motivating to work with science media tools, enjoyed the opportunity to work with colleagues and to work directly with students, liked developing a lesson that was usable for their own classes, and enjoyed learning new things about media and a new approach to teaching (see Figure 6).

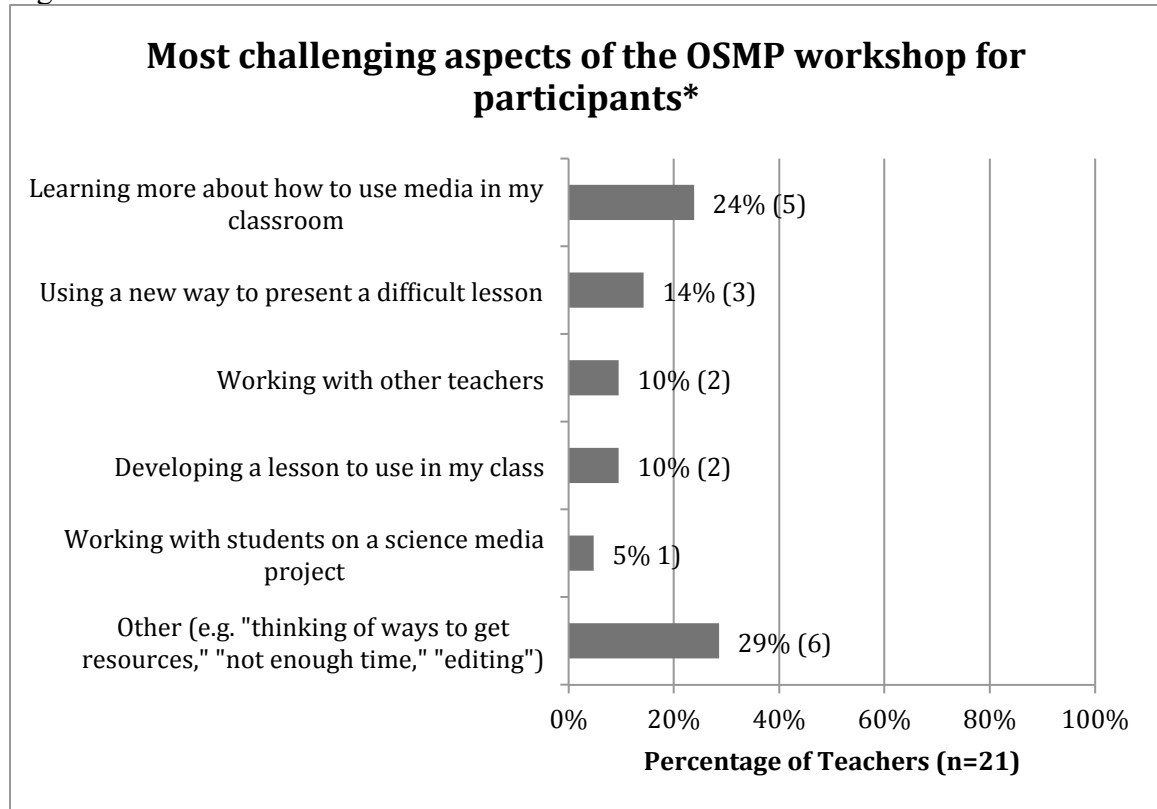
Figure 6.



*teachers marked multiple responses

About one-fourth of the participating teachers identified learning to use the media tools in their classroom as their primary challenge. Others identified the lack of time, and lack of appropriate space (see Figure 7).

Figure 7.



*teachers marked multiple responses

A few teachers did not identify any aspects of the workshop as “most challenging,” indicating they “loved” all of it.

Plans for classroom implementation

The participating teachers envisioned diverse ways to integrate their new skills into their classrooms, using both teacher-created media and student-created media. They saw multiple applications in the classroom and the lab setting, including documenting and presenting student work, assessing students, and using media as a means for students to teach each other. Specific comments included, “I will look for every possible opportunity to offer alternate means for student learning and assessment of student learning through media-related activities,” and “[I see this] as a way for students to teach each other specific concepts.”

Teachers also saw science media as a way to increase class participation, be more inclusive of ESL/special education students, create additional student centered activities and enhance science journalism. Teachers reported, “I believe this is a great way to accommodate ESL/special education students in the classroom,” and “[I plan on] developing awareness in my journalism classes about the importance of science journalism!”

Some teachers anticipated expanding the curriculum and extending the use of media beyond science, with comments such as “I can use similar technologies to create more relevant assignments, not only in science but in other subject areas.”

Teachers also recognized the applicability of science media beyond the classroom, describing how they plan to use it to share and collaborate with colleagues, with comments such as, “I plan on sharing this idea and a few examples with the staff at my building during a professional development meeting, and “I would like to show other teachers how media projects can be a natural fit with any content.” One teacher also described reaching beyond the district, noting, “I have already presented at a national conference and plan to do so again.”

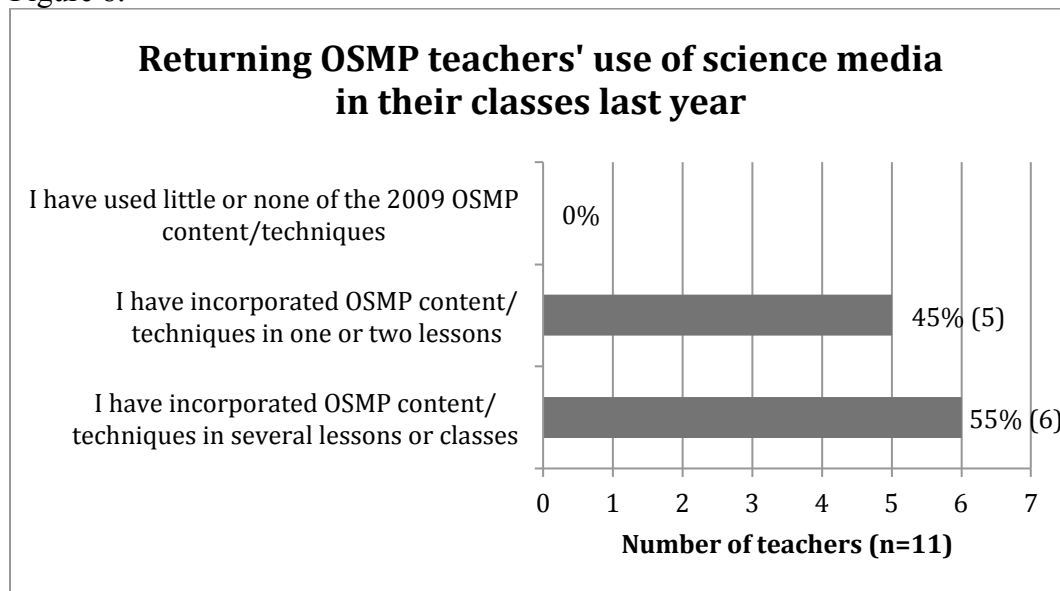
Some teachers envisioned the utility of science media in enhancing parent-teacher relations, with one teacher writing, “I plan to increase the quality of my communication with parents about what their children are doing in school.

Some teachers also anticipated expanding their skills by learning additional software tools, as one teacher detailed, “Hopefully, I can learn more software that I can use in class. For example, I would love to learn GarageBand and be able to integrate it into iMovie. I would also like to learn more about Windows movie media.”

2009 OSMP participants report on using science media in 2009-2010 school year

To understand the extent and nature of how the returning OSMP teachers used what they had learned in the previous summer OSMP workshop in their classrooms, we included two questions in the survey about their 2009-2010 school year. All the returning teachers indicated that they had incorporated OSMP content and/or techniques into their classes (see Figure 8 below), and the majority had found multiple applications for using science media.

Figure 8.



Teachers who indicated they had more limited application of their OSMP skills in the last year (in one or two lessons) described some of the ways they directly incorporated science media in their lessons, labs, and assessments, both creating media themselves and having students create media products. One teacher explained, “At the end of the year my students in one class were given a choice of taking my 50 question final exam or producing a media project based on any of the science content learned from the past 2 years in class.” Another teacher wrote that s/he “recorded inquiry lab, recorded dissection lab, recorded powerpoint presentations. [I also] had students develop lesson of topic from the year using flip and video camera.”

One teacher also specifically indicated that participating in the second workshop helped increased her confidence to do more in her classroom, saying,

[Last year] I had my students work on a science story to be presented in audio only, since I wasn't confident about my video editing skills. Now I feel more confident about video, so I can incorporate that component in my classroom.

Of the returning OSMP teachers who indicated more extensive use of their science media skills in the past year (across several lessons or classes) some teachers described consistently using media making, writing that “Students video tape labs and projects at least one activity per unit,” and “I offer more choices that offer creating media projects/video.” Another teacher wrote, “I designed and implemented a small scale semester-long media project for 12 of my students.”

One teacher indicated using media skills beyond science, writing, “I am continually using journalistic technologies in many projects in different curriculum areas.” Other teachers described more specific applications, such as, “We used video to document classroom ‘trials’ about the ‘color of blood inside the human body’ and the ‘ethics of cloning humans.’” These descriptions sometimes also included some difficulties teachers encountered, as in this example, “[We] used video to create stories about the animals living in the classroom. In all cases, we collected much footage, but bogged down in time and editing skills. We did not complete any “finished products” but can continue working with footage.”

These descriptions indicate that across grade levels and topic areas, the returning OSMP teachers incorporated science media and journalistic techniques in their classrooms.

Conclusions

The OSMP leaders designed the 2010 workshop to complement the 2009 workshop, with the goal of growing the cohort of innovative science teachers in OPS using science media in their teaching. To accomplish this, they focused on having teachers create media in the workshop and by simulating a classroom environment with students. The written feedback from teachers indicates that this overall goal was met.

A strength of the 2010 OSMP workshop was having the participating teachers select the topics they would develop into media lessons during the workshop. This insured that the lessons were relevant and fit within the curriculum and the teachers’ individual course plans. Overall, the participating teachers felt that the quality of the new science media lessons were comparable in difficulty but more engaging and meaningful to students than a typical lesson. This indicated the perceived added value of integrating science media to capture students’ attention and make the content more relevant to them. Providing teachers with the opportunity to collaborate with one another was an important feature of the workshop. The use of more readily available and accessible equipment meant teachers were able to successfully complete the design and implementation of media-based science lessons with students within the allotted time of the workshop.

In summary, the teachers participating in the OSMP 2010 workshop reported that the lessons they developed and the skills they acquired would be directly applicable to their classrooms, and would help them make their curriculum more meaningful, interesting and engaging. They found working with other teachers and students rewarding, and they enjoyed learning more about media and using a new way to present difficult material. Participating teachers left the OSMP 2010 workshop feeling capable of creating and using media in their classrooms. These teachers, however, still saw lack of available equipment for students and lack of time in the curriculum as significant barriers to implementing science media assignments in their classrooms. In spite of these barriers, the returning OSMP teachers reported using their science media skills in substantive ways during the last school year. This suggests that even with limited tools and time, the 2010 OSMP participants are likely to implement science media teaching in their classrooms.

References

- Spiegel, A. N. (2010) *Omaha Science Media Project 2009 Workshop Evaluation Summary*. Lincoln, NE: Center for Instructional Innovation, University of Nebraska–Lincoln.
- Spiegel, A. N. (2009) *Omaha Science Media Project 2009 Workshop Follow-up Report: Teachers' Plans and Activities Using New Science Media Skills*. Lincoln, NE: Center for Instructional Innovation, University of Nebraska–Lincoln.

Appendix

Omaha Science Media Project 2010 Workshop Feedback

Teacher name: _____ Grade level(s) teaching _____

School name: _____ Part of 2009 OSMP? Yes No

1. How confident are you that you will be able to use the lesson you've developed this week with your students in the coming year? (circle one)

I have already
integrated this
lesson into my
course plan

I have a good idea
of where this will
fit into my course
plan

I'm not sure this
will fit into my
course plan

I doubt I'll be able
to use this lesson in
the coming year

2. Compared with an average lesson from the same course level, how would you rate the lesson you've developed this week?

In content difficulty:	Less rigorous in content difficulty	Equally as rigorous in content difficulty	More rigorous in content difficulty
In how meaningful to students:	Less meaningful to students	Equally as meaningful to students	More meaningful to students
In interest level of students:	Less interesting to students	Equally as interesting to students	More interesting to students
In how well students will remember it:	Less memorable for students	Equally as memorable for students	More memorable for students
In how engaging it is for students:	Students will be less engaged	Students will be equally engaged	Students will be more engaged

3. Aside from the lesson you developed yourself, are you planning to use or adapt any lessons that other OSMP participants developed this week for your own classroom use?

- No
 Yes, one or two
 Yes, three or more

4. Do you plan to create additional science media assignments or lessons for your students based on what you've learned this week? (circle one)

I do not plan to create
additional lessons using
media

I plan to create additional
lessons using media but I will
need more support

I will be able to create
additional lessons using
media on my own

5. What significant barriers to implementation do you foresee for implementing science media assignments in your class?

- None
 Lack of equipment
 Lack of confidence/skill to use media
 Lack of time
 Other: _____

6. What were the most rewarding aspects of this workshop for you? (check all that apply)

- Working with other teachers
 - Developing a lesson to use in my class
 - Working with students on a science media project
 - Learning more about how to use media in my classroom
 - Using a new way to present a difficult lesson
 - Getting inspired to do something new
 - Other: _____
-

7. What were the most challenging aspects of this workshop for you?

- Working with other teachers
 - Developing a lesson to use in my class
 - Working with students on a science media project
 - Learning more about how to use media in my classroom
 - Using a new way to present a difficult lesson
 - Other: _____
-

8. Other than what you've already answered, how will you use what you've learned at OSMP in the future?

9. If you were a 2009 OSMP participant, to what extent have you been able to incorporate what you learned into your teaching last year?

- | | | |
|--|---|---|
| I have used little or
none of the 2009 OSMP
content/techniques | I have incorporated OSMP
content/techniques in one to
two lessons | I have incorporated OSMP
content/techniques in
several lessons or classes |
|--|---|---|

10. Please describe: